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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Tao Zhang

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EXAMINER

BAE, JI H

ART UNIT

PAPER NUMBER

2115

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/550,473	ZHANG ET AL.	
	Examiner	Art Unit	
	JI H. BAE	2115	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-14, 17-24 and 26-29 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-14, 17-24 and 26-29 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☒ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 01 August 2011 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-302) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

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DETAILED ACTION

Response to Arguments

Applicant's arguments filed on 1 August 2011 with respect to the following issues have been fully considered and are persuasive:

- Objection to the drawings
- Rejection of claims under 35 U.S.C. 112, second paragraph
- Rejection of claims under 35 U.S.C. 101.

The rejection of claims 1-29 and the objection to the drawings have been withdrawn.

However, the arguments with respect to the rejection under prior art are not persuasive. Applicant's amendments fail to further define the invention over the cited prior art.

The Examiner has withdrawn the rejection under 35 U.S.C. 112, second paragraph, with respect to the indefiniteness regarding "enabling", as Applicant's amendment is sufficient to overcome the rejection. Additionally, the Examiner has also withdrawn the rejection under 35 U.S.C. 112, second paragraph, with respect to the indefiniteness of "firmware interface". However, the Examiner has maintained the position stated in the previous Office Action -- specifically, that "firmware interface" may be interpreted as encompassing anything that performs the functions as claimed, and that any prior art reference which teaches the claimed steps carried out by applicant's "firmware interface" will be understood as teaching the firmware interface itself.

While the aforementioned objections and rejections have been withdrawn, the Examiner maintains the objection to the specification. In paragraphs 36 and following, certain reference numbers used in describing Fig. 5 give the appearance of referring to a specific component of the system. However, it is clear from Fig. 5 that certain reference numbers refer to a particular

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function or step carried out by the component, rather than the component itself. For example, the first sentence of paragraph 36 reads:

*Using a firmware interface, the installation toolkit **500** will update the firmware **502** stored in a non-volatile memory **508**.*

In accordance with Fig. 5, it is clear that “500” refers to the installation toolkit, and “502” refers to the firmware. However, the drawing clearly shows that “508” refers to the **operation** of updating non-volatile memory **504**. Yet the description in paragraph 36 appears to use “508” to refer to the non-volatile memory, which is clearly labeled as “504”.

The Examiner recommends amending the specification in the paragraphs describing Fig. 5 to more clearly differentiate the reference numbers of the components from the reference numbers of the operations. For example, the first sentence from paragraph 36 could be amended to read:

*Using a firmware interface, the installation toolkit 500 will update the firmware 502 stored in a non-volatile memory **504 during step 508**.*

In regards to the prior art rejections, the Examiner notes that the amendments regarding a shared area were previously recited in claims 16 and 25. Applicant’s arguments regarding this feature are not persuasive. In particular, Applicant’s has misconstrued the Examiner’s position on pp. 8, last paragraph of Applicant’s remarks. It is not the Examiner’s position that the extension area and shared area are the same thing. Fig. 3 shows that the memory 204 is itself divided into several regions, which respectively store hardware information, BIOS

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extensions, option ROMs, etc. Thus, the regions that store BIOS extensions and options ROMs may be construed as extension areas, while the region storing hardware information may be construed as a shared area.

With regards to the additional limitations regarding making the stored firmware binary file in the extension area visible to the BIOS, the Examiner submits that this is already the case. Specifically, since the micro-BIOS is clearly able to access the information for the BIOS extensions and option ROMs, it therefore must be the case that the extension areas have been made visible to the micro-BIOS.

Specification

The disclosure is objected to because of the following informalities: in paragraphs 36 and 37, the reference numbers in the specification do not match with those given in the figures. The Applicant has evidently interchanged the reference numbers for the components (installation toolkit, firmware, non-volatile memory) with the steps being carried out. For example, in Fig. 5 the non-volatile memory is given the reference number "504", while in paragraph 36, it is referred to by the numbers "508" and "510". The examiner notes that in Fig. 5, numbers "508" and "510" are used to reference the **steps** of updating the non-volatile memory rather than the actual non-volatile memory itself.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6, 9, 10, 13, 17-22, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Rothman et al., U.S. Patent Application Publication No. 2004/0123093.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

The Examiner notes that the reference is also available as prior art under 35 U.S.C. 102(a).

Regarding claim 1, Rothman teaches a method comprising:

storing a firmware binary file in an extension area **[Fig. 3: memory areas 304 and 306]** of a non-volatile storage device of a computer system **[Fig. 3: BIOS extensions and option ROMs stored in memory 204. Fig. 1 and 2: memory 204 is part of micro-BIOS 130 and ROM 128. Paragraphs 16 and 25: memory 204 comprises non-volatile memory]**, wherein the non-volatile storage device includes a shared area **[Fig. 3: hardware information stored in area 302]** to provide communication between the extension area and a BIOS **[Paragraph 34: hardware information 302 is accessible to micro-BIOS and may be used to match hardware to the option ROMs]**; and

enabling a Basic Input/Output System (BIOS) of the computer system to access the stored firmware binary file **[Paragraph 23: micro-BIOS locates BIOS extensions and option**

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ROMs to complete boot configuration steps] by making the stored firmware binary file in the extension area visible to the BIOS **[micro-BIOS is able to access the extensions area, therefore they have already been made visible to the micro-BIOS]**.

Regarding claim 2-4, Rothman teaches invoking a firmware or hardware interface via an installation toolkit **[Paragraph 35: detection services 216 locate and copy BIOS extensions and option ROMs based on location information determined from BIOS extensions and option ROMs stored in memory 204]**.

Regarding claim 5, Rothman teaches that the firmware binary file is a firmware application binary **[Paragraph 35: BIOS extensions are executable]**.

Regarding claim 6, Rothman teaches that the firmware binary file is an OS application binary **[Paragraph 23: BIOS extensions extend micro-BIOS]**.

Regarding claim 9, Rothman teaches that the BIOS is stored in a main area of the non-volatile storage **[Fig. 1: ROM 128 and micro-BIOS 130, vs. memory 204 in Fig. 2]**.

Regarding claim 10, Rothman teaches performing preparatory tasks **[Fig. 5: step 502, initializing hardware]**.

Regarding claim 13, Rothman teaches the method of claim 1, and also the computer system to executed the claimed method.

Regarding claim 17, Rothman teaches that the first and second memory devices are the same device **[Fig. 1 and 2, paragraph 22: micro-BIOS includes boot engine which executes the booting functions]**.

Regarding claims 18-22, Rothman teaches the method of claims 1-6, and also the article of manufacture with instructions stored thereon to execute the claimed method.

Regarding claim 24, Rothman teaches a firmware storage apparatus comprising a main area to store BIOS program code;

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a shared area to store data accessible by both the main area and the extension area

[Fig. 3: hardware information 302]; and

an extension area to store complementary BIOS program code [Fig. 2 and 3: micro-BIOS includes memory 204 which includes BIOS extensions].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 11, 12, 14, 23, and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothman in view of Zimmer, U.S. Patent Application Publication No. 2003/0097581. The Examiner notes that Zimmer is available as prior art under 35 U.S.C. 102(b).

Regarding claim 7, Rothman teaches the method of claim 1, but does not teach that the computer system operates in accordance with the EFI framework specification.

Zimmer teaches a computer system that operates in accordance with EFI [Paragraphs 3, 24, 25].

It would have been obvious to one of ordinary skill in the art to combine the teachings of Rothman and Zimmer by modifying the system of Rothman to operate in accordance with EFI, as taught by Zimmer. Both Rothman and Zimmer are directed towards pre-boot initialization of computer systems. The teachings of Zimmer regarding EFI would have improved the system of Rothman by conforming Rothman to operate according to an industry standard specification [Paragraph 4].

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Regarding claims 11 and 12, Zimmer teaches a preparatory task of checking a firmware binary file for data integrity by checking a digital signature **[Paragraph 57]**. It would have been obvious to one of ordinary skill in the art to further modify Rothman to check for data integrity of an option ROM by checking a digital signature, as taught by Zimmer. Both Rothman and Zimmer teach the use of option ROMs. The teachings of Zimmer would have improved the system of Rothman by providing a way to verify data integrity of the option ROMs. Absent Zimmer's teaching, Rothman does not appear to provide way to ensure data integrity.

Regarding claims 14 and 23, Rothman and Zimmer teach the method of claim 7, and also the computer system and article of manufacture with instructions to implement the claimed method.

Regarding claims 26-29, it would have been obvious as a matter of design choice to provide complementary BIOS program code to perform any number of functions that would have enhanced the functionality of the micro-BIOS, including data provisioning code, anti-theft code, etc.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rothman and Zimmer as applied to claim 7 above, and further in view of Zimmer et al., U.S. Patent Application Publication No. 2003/0188173 (Zimmer '173). The Examiner notes that Zimmer '173 is available as prior art under 35 U.S.C. 102(b).

Regarding claim 8, Rothman and Zimmer teach the method of claim 7, but do not teach the use of a DXE dispatcher to trigger the BIOS to access the stored firmware binary file.

Zimmer '173 teaches a DXE dispatcher to perform the claimed function **[Paragraphs 20, 21, 22]**.

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It would have been obvious to one of ordinary skill in the art to combine Zimmer '173 with Rothman and Zimmer by using a DXE dispatcher. Zimmer and Zimmer '173 are both directed towards the EFI specification. It would have therefore been obvious to implement the DXE dispatcher in the combination of Rothman and Zimmer as part of implementing the EFI specification.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JI H. BAE whose telephone number is (571)272-7181. The examiner can normally be reached on Monday-Friday, 9 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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